

WHAT IS CLAIMED IS

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1. An image processing apparatus which transmits a codestream through a transmission path, the codestream being created from an image by dividing the image into rectangular portions and performing a discrete wavelet transform, a quantization 10 and an entropy encoding for the respective rectangular portions of the image, the image processing apparatus comprising:

an error resilience inserting unit inserting error resilience to respective code data of the rectangular portions prior to the entropy coding; and

15 an error resilience setting unit setting intensities of the error resilience inserted to the respective code data for the error resilience inserting unit, so that the error resilience intensities are different according to base units of the respective code data.

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25 2. The image processing apparatus of claim 1 wherein the error resilience setting unit sets the intensities of the error resilience so that the error resilience intensities are different according to

respective portions of the image.

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3. The image processing apparatus of claim 2 wherein the error resilience setting unit sets the intensities of the error resilience so that an intensity of the error resilience inserted to code data of the rectangular portions constituting a character part of the image is 10 higher than an intensity of the error resilience inserted to code data of the rectangular portions constituting a picture image part of the image.

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4. The image processing apparatus of claim 1 wherein the error resilience setting unit sets the intensities of the error resilience so that an intensity of the error resilience inserted to code data of the rectangular portions constituting a central part of the image is 20 higher than an intensity of the error resilience inserted to code data of the rectangular portions constituting a circumferential part of the image.

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5. The image processing apparatus of claim 1 wherein the
error resilience setting unit sets the intensities of the error resilience
so that an intensity of the error resilience inserted to code data of
the rectangular portions constituting a portrait image part of the
image is higher than an intensity of the error resilience inserted to
code data of the rectangular portions constituting other image parts
of the image.

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6. The image processing apparatus of claim 1 wherein the
error resilience setting unit sets the intensities of the error resilience
so that the error resilience intensities are different according to
15 quality-of-image components of the code data.

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7. The image processing apparatus of claim 6 wherein the
error resilience setting unit sets the intensities of the error resilience
so that an intensity of the error resilience inserted to code data
belonging to a high order layer of the quality-of-image components
is higher than an intensity of the error resilience inserted to code
25 data belonging to a low order layer of the quality-of-image

components.

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8. The image processing apparatus of claim 6 wherein the error resilience setting unit sets the intensities of the error resilience so that an intensity of the error resilience inserted to code data belonging to an LL component of the quality-of-image components 10 is higher than an intensity of the error resilience inserted to code data belonging to other components of the quality-of-image components.

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9. The image processing apparatus of claim 6 wherein the error resilience setting unit sets the intensities of the error resilience so that an intensity of the error resilience inserted to code data 20 belonging to a brightness component of the quality-of-image components is higher than an intensity of the error resilience inserted to code data belonging to a color-difference component of the quality-of-image components.

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10. The image processing apparatus of claim 6 wherein the
error resilience setting unit sets the intensities of the error resilience
so that an intensity of the error resilience inserted to code data
belonging to a ROI component of the quality-of-image components
5 is higher than an intensity of the error resilience inserted to code
data belonging to other components of the quality-of-image
components.

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11. The image processing apparatus of claim 1 wherein the
image includes a plurality of frames and the codestream is created
from each of the plurality of frames, and wherein the error resilience
15 setting unit sets the intensities of the error resilience so that the
error resilience intensities are different according to the frames of
the code data.

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12. The image processing apparatus of claim 11 wherein the
error resilience setting unit sets the intensities of the error resilience
so that an intensity of the error resilience inserted to code data
25 belonging to a periodically appearing frame of the plurality of

frames is higher than an intensity of the error resilience inserted to code data belonging to other frames of the plurality of frames.

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13. The image processing apparatus of claim 11 wherein the error resilience setting unit sets the intensities of the error resilience so that an intensity of the error resilience inserted to code data belonging to an irregularly appearing frame of the plurality of frames is higher than an intensity of the error resilience inserted to code data belonging to other frames of the plurality of frames.

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14. The image processing apparatus of claim 11 wherein the error resilience setting unit sets the intensities of the error resilience so that an intensity of the error resilience inserted to code data belonging to a greatly changed frame of the plurality of frames is higher than an intensity of the error resilience inserted to code data belonging to other frames of the plurality of frames.

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15. The image processing apparatus of claim 1 further comprising a detection unit detecting a congestion state of the transmission path, wherein the error resilience setting unit is provided to change the setting of the intensities of the error resilience according to a detected congestion state of the transmission path.

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16. The image processing apparatus of claim 1 wherein the error resilience setting unit sets the intensities of the error resilience so that the error resilience intensities are different according to respective tiles of the image.

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20 17. The image processing apparatus of claim 1 wherein the error resilience setting unit sets the intensities of the error resilience so that the error resilience intensities are different according to respective precincts of the image.

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18. The image processing apparatus of claim 1 wherein the error resilience setting unit sets the intensities of the error resilience so that the error resilience intensities are different according to respective code-blocks of the image.

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19. The image processing apparatus of claim 1 wherein the
error resilience setting unit sets the intensities of the error resilience
so that the error resilience intensities are different according to
respective packets of the image.

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20. An image processing program embodied therein for causing a computer of an image processing apparatus to execute an image processing method which transmits a codestream through a transmission path, the codestream being created from an image by dividing the image into rectangular portions and performing a discrete wavelet transform, a quantization and an entropy encoding for the respective rectangular portions of the image, the method comprising steps of:

25 inserting error resilience to respective code data of the

rectangular portions prior to the entropy coding; and
setting intensities of the error resilience inserted to the
respective code data for the error resilience inserting step, so that
the error resilience intensities are different according to base units
5 of the respective code data.

21. A computer-readable storage medium storing a program
10 embodied therein for causing a computer of an image processing
apparatus to execute an image processing method which transmits a
codestream through a transmission path, the codestream being
created from an image by dividing the image into rectangular
portions and performing a discrete wavelet transform, a quantization
15 and an entropy encoding for the respective rectangular portions of
the image, the method comprising steps of:

inserting error resilience to respective code data of the
rectangular portions prior to the entropy coding; and

20 setting intensities of the error resilience inserted to the
respective code data for the error resilience inserting step, so that
the error resilience intensities are different according to base units
of the respective code data.